APPENDIX 1 DATA SHEETS

FORM P – Primary stranding data

FORM C1 – Clinical data

FORM HI – Human interference

FORM T1 – Tier 1 sampling (live and deceased)

FORM T2 – Tier 2 sampling (deceased)

FORM T3 – Tier 3 sampling (for veterinarian or trained technician)

FORM T4 – Tier 4 (pathology)

MASS STRANDING :

- **TEAM ONE DATA SHEET A**
- **TEAM ONE DATA SHEET B (PHOTOS of ADDITIONAL FEATURES)**
- **TEAM TWO DATA SHEET (MEASUREMENTS, SKIN, BLUBBER AND MUSCLE)**
- **TEAM THREE DATA SHEET- (TEETH, (See Separate Sheet) EYE AND EXTERNAL PARASITES)**
- **TEAM THREE- (TOOTH SAMPLES)**
- **TEAM FOUR DATA SHEET (2 PAGES plus PATHOLOGY)**
- **TEAM FOUR (PATHOLOGY) - ONE FORM PER ANIMAL**
- **TEAM FOUR - ALTERNATIVE (BULK RECORDING FORM) (one form, many animals)**
- **SUMMARY PRESERVATION, SHIPPING, TRACKING : For additional information see Appendix 4, and shipping info, tracking forms.**

FORM SP - SHIPPING INFORMATION

SAMPLE PRESERVATION AND TRACKING FORM

P	**Necessary Equipment**: Form, clipboard, pen, map/ GPS if possible, camera, phone, state operational procedures **Necessary personnel**: One person, low level skill required **Carcass code**: **All animals All species** **Additional information**: Guide/ form for human interference. Species ID guide, or call *see guide for definition of dependant young or contact a specialist (Appendix 2)

PRIMARY STRANDING DATA- describes event- one form per event **stranding ref #_____**

collected by (name)_____ _____ (contact)_____

LOCATION State_____ Nearest Named Place_____

Distance+ direction_____

Geographic unit (bay, peninsula, etc)name_____

Lat/ Long_____Map reference_____Datum type_____

First seen___:___D___/M___/Y_____ by (contact)_____ at location_____

Reported___:_____/___/_____ by _____ at location_____

Data collected ___:_____/___/_____ by _____ at location_____

STRANDING INFORMATION

No of animals Total_____ Male_____ Female_____ Dependant young*_____

Species_____Species confirmed?_____by _____

See species ID key at Appendix 4

Time and date of stranding _____estimate or definite?_____ Seen alive? (Y/N)____

Circumstances of stranding_____

_____

Weather at estimated/ definite time of actual stranding: Temp. _____, cloud cover/ 8_____, Sunny?_____

wind speed _____ wind dirn_____Sea state _____, swell height_____ dirn_____.

Evidence of human interference: Boat collision____ Shot____, Fisheries interaction ____ Other _____

Puncture wound_____ Cut_____ Abrasion_____ Missing appendage_____ Other_____

If evidence of human interaction, see protocol for human interference (HI).

No of animals rescued: Total_____ Male _____ Female _____ Dependant young_____

Direction headed _____

Post release monitoring- type _____by (contact)_____

Sampled Tier (1,2,3,4) ____ Method of **disposal** _____

Media coverage? (describe)_____

Sketch of stranding site, including position of animals, indicate wind direction, swell direction and note time of sketch.

Take photo- Photo #s_____

Photographer contact details_____

If greater than 5 animals, and more than 6 people (some with experience) consider Mass Stranding samplng protocol (Appendix 3).
If can be moved or time unlimited, and inexperienced veterinary expertise available, consider single dead sampling protocol (Appendix 2).
Otherwise progress to tier 1. If time and equipment permit, tier 1,2. If time, equipment and personnel permit, tire 1,2,3. If experienced veterinary assistance available on site, tier 1,2,3,4. (see tier guide)
If human interference (HI) do not proceed until HI protocol is completed and contact (insert state authority contact for compliance issues).

CI	**Necessary Equipment**: Monitoring: form, pen, watch, stethoscope? Thermometer (extended probe, not glass). Sampling: blood collection tubes, syringes, needles, bacto swabs?, ice/ refrigeration, plastic vials, plastic pipettes, gloves. (NB permits for some samples) **Necessary personnel**: Monitoring: One person, preferably experienced. Veterinarian required for sampling. **Carcass code**: All animals **All species. Additional information:** From SP, Appendix 1. **coordinate with rescue and tier one data and sampling**. **Additional information**: Guide/ form for human interference. Species ID guide, or Appendix 2. **NB: ethics permit is required to handle, and particularly to manipulate or collect samples from any wild animal (unless a vet acting under the veterinary code)**

CLINICAL DATA **stranding ref#_____ collected by _____**

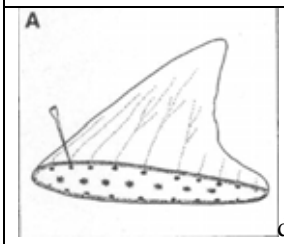
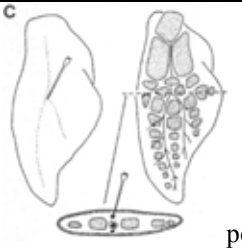
Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record _____:____D___/M___/Y____, contact details _____

Species_____ confirmed by _____

* every 10-15 min. If feasible, collect blood at least twice (beware safety). Underlined = priority

Parameter	Conditions	Response	Time of assessment Response	Time of assessment Response	Time of assessment Response	Time of assessment Response
Muscle tone	Attempting to open mouth; ability to move	resistance to traction of the tongue;				
Respiration rate/ min	1-3 / min					
Respiration quality	< 1second					
Vocalizations	Audible (apart from respirations)					
Heart rate/min Auscultate or palpate, posterior to pectoral flipper at level of carpus:	30 -70bpm					
Eye reflex Palpebral	Should have reflex lid closure to touch. Note any discharges					
Blowhole reflex Should be closed	Should close if touched					
Anal tone	Should tighten when touched					
Temperature Only useful is suitable rectal probes available (min 30 cm – not glass)	Normal 36.5 – 37.5C (97.7 - 99.5F)					
SAMPLES						
Blood LiH						
Blood EDTA						
Blood Fl Ox						
Blood plain						
Skin scraping (DNA)	(ethics permits required)					
Parasites	(check orifices and grooves – label and note where found)					
Swabs (chill)	Blowhole…… Discharges…….. Lesions…….. Time collected..…:..…					
Blowhole spray	(On sterile agar plate /swab) Time collected……:…….					
Biopsies (edge of lesion)	(ethics permits required)					

External observations (skin, eyes, orifices, body condition)	Time of: Death……:……. Release ……:……		
 dorsal	 tail stock	 pec.	 tail

Monitoring details: Codes for reflexes/ tone/ resp- **S = strong, W = weak, N = none**.
Sample details: Skin (DNA)- scrape plastic scourer pad along animal to collect skin slough. Preserve in 80% ethanol or freeze. Avoid freeze-thaw.
Blood: 2 ml LiH to lab ASAP <48h chilled. If collected, send EDTA blood and 2 ml each separated LiH plasma and serum (separate by centrifuge 3000rpm 10 min, or stand to settle). Freeze remaining serum, plasma, blood cells. If lab > 48h, send frozen plasma/ serum and fresh whole blood smear.
Swabs: Send chilled to lab ASAP < 48h. If longer, freeze. Request CBC, full biochem. Biopsy: 10x vol 10% formalin.
Additional information: Species ID guide, or contact a specialist (Appendix 4).

HI	To be followed for all animals where human interference is a possibility, either before or after death. Coordinate this protocol with tier 1. Do not proceed to T2-T4 until HI is satisfied. It does not replace existing state operational procedures for compliance issues, but is intended as a link between the sampling protocols and those procedures.

HUMAN INTERFERENCE
Stranding ref#_____ Carcass code_____

Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record _____:_____/___/____, collected by (name)_____(contact)_____

Species_____ confirmed by _____

1. Compliance incident is suspected_____, possible____ or unlikely_____
Boat_____ Shot_____ Fisheries_____ Other_____

2. **Contact (*insert compliance officer/ coordinator contact*)** to seek advice before retrieval or necropsy.

3. Ensure at least one member of **Conservation agency, Parks or Fisheries staff present** at all times.

4. Treat the animal, surrounding area and any samples from the animal as **potential evidence** and ensure staff in the field use evidence collecting guidelines.

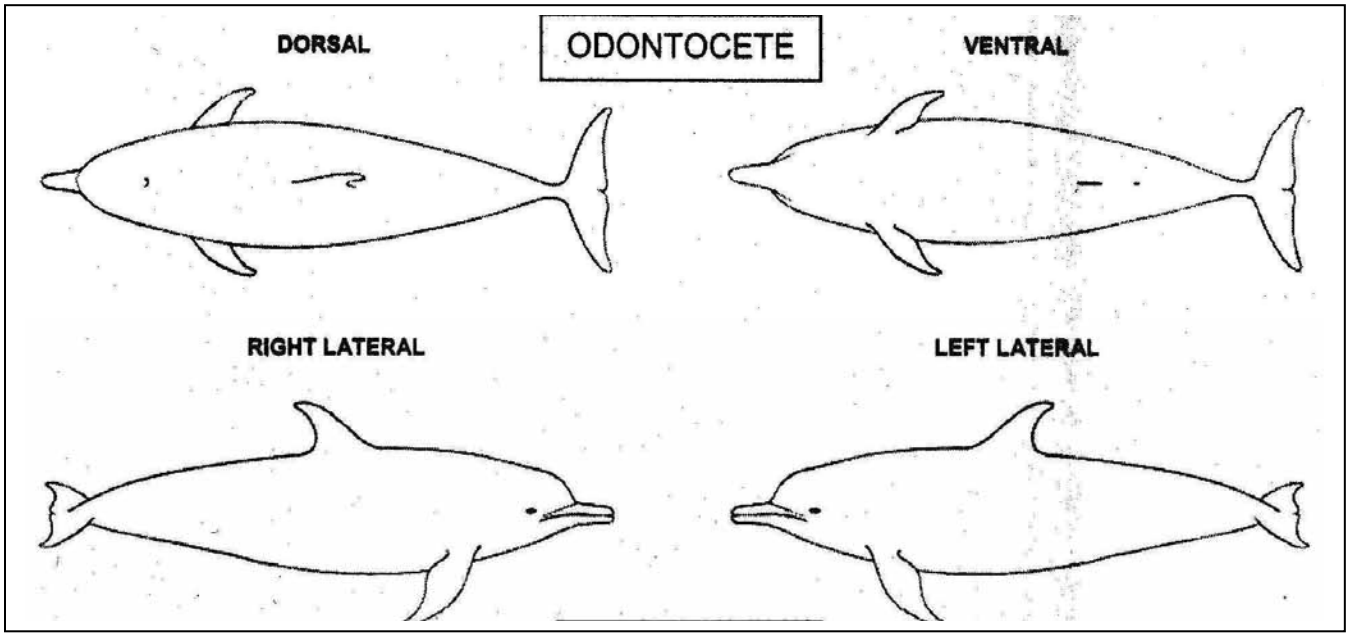
5. **Without disturbing the animal, complete as much of forms P (Primary stranding data) and T1 individual ID, photos etc) as possible** (especially all photographs, with additional photographs of any surrounding evidence). All photos to include label with animal ID and date.

6. **Document with notes and photographs**, any manipulations of the animal ie, movement, sampling, post-mortem examination.

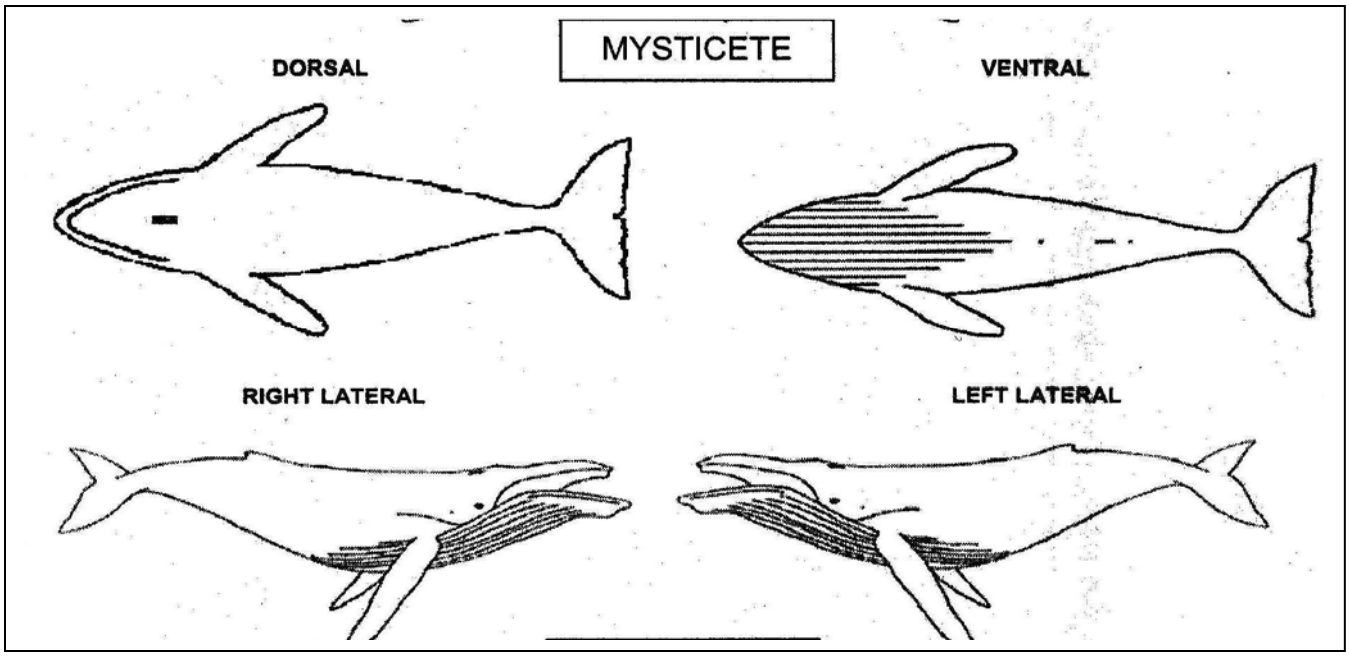
8. Ensure **as detailed a necropsy as possible,** including pathology. Ensure at least one member of **Parks staff** present at all times. Contact person from Appendix 2 for **specialist necropsy**. Only if not available, follow protocols appropriate to resources (after photography and description, parts of the animal may be transported to a pathologist for examination of suspicious lesions- use sample tracking forms). Chilled < 48h, frozen if >48h to pathologist)
N/E = not examined

Initial observation	**Yes**	**No**	**unsure**	**N/E**	**Photo ##**
Body condition: robust					
emaciated					
Penetrating wounds					
Cuts					
Abrasions					
Missing appendages					
Haemorrhage/ bruising					
Scavenger damage					
Sub-dermal haemorrhage					
Broken bones					
Lung contents: fluid					
Froth					
Stomach contents unusual					
Other					

Description/ sketches/ other details:



Diagrams: Victorian Cetacean Contingency Plan (Warneke, Obendorf and Gallechio)



T1

Necessary Equipment: Form, pen, camera, scale and ID, tape measure, plastic scourer/ scalpel blade, accurate scales. Plastic vial, Salt soln/ 80% ethanol/ freezer. **Necessary personnel**: One- two people, no skill required (but experience preferred). **Carcass code**: **All animals. Coordinate with rescue, welfare and clinical sampling**
Additional information: Guide/ form (HI) for human interference; Appendix 2 (single animal protocol). Species ID guide, or call contact a specialist (Appendix 4), guide to dependent young. If live: clinical data form or Appendix 1. **Ensure**: Primary data form (P) is complete.

TIER ONE SAMPLING (live* and deceased) stranding ref #_____ Collected by_____

Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record _____:_____/___/____, contacts _____

Species_____ Carcass code (see footer below)_____

BOLD CAPS- minimum samples

Underlined- priority photos

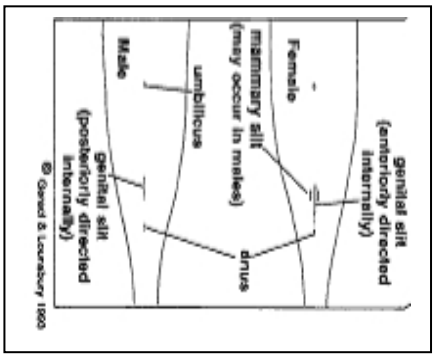
EVIDENCE OF HUMAN INTERFERENCE: Boat collision____ Shot____, Fisheries ____ Other _____

Puncture wound_____ Cut_____ Abrasion_____ Missing appendage_____ Other_____

Evidence of human interaction? If so, see protocol for human interference (HI). YES_____ NO_____

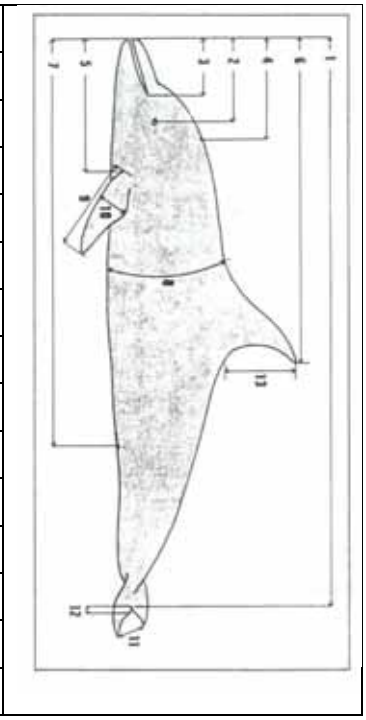
Photos (right angle to animal, preferably digital, colour, avoid flash, include animal ID and scale in photo)

1. **WHOLE ANIMAL SIDE VIEW left #_____ right #_____**
2. Tail flukes (above) #_____
3. Dorsal fin #_____
4. **HEAD FROM SIDE left #_____ right #_____**
5. Head from above #_____
6. Teeth/ baleen #_____
7. Whole ventral surface #_____
8. Genital slit, anus and umbilicus (all in one) #_____
9. Scars, wounds, injuries, other abnormalities #_____
10. Flipper left #_____ right #_____
11. External parasites (check grooves and orifices) #_____



Measurements: (straight line) in mm

1.TOTAL LENGTH (tip of upper jaw to deepest part of fluke notch)	
2.Tip upper jaw- centre of eye	
3.Length of gape (upper jaw to corner mouth)	
4.Tip upper jaw to blowhole	
5.Tip upper jaw to front insertion of flipper	
6.Tip upper jaw to tip dorsal fin	
7. Tip upper jaw to centre anus	
8.Max girth	
9.Flipper- tip to front insertion	
10.Flipper- max width	
11.Tail flukes tip to tip	
12. Depth of fluke notch	
13.Dorsal fin tip to base	
Throat grooves? _____ feathering of tongue? _____Snout hairs?_____	(Y/N)
Weight (code 1*, 2 or 3)	



Count teeth/baleen *from front to back and enter any missing teeth in sequence i.e. 10 (2) 9 (4) is 10 teeth followed by 2 missing, followed by 9 present, etc. Note if teeth not erupted.*

UR _____ UL _____

LR _____ LL _____

Milk present/ absent _____ (cut mammary gland if dead)

SAMPLE: SKIN SCRAPING/ SLICE FOR DNA X 2* _____
(*if alive, do not collect unless ethics permit has been obtained)

Discharges (describe):
Eye_____
Blowhole_____
Mouth_____
Genital_____
Anus_____
Other_____

Sample details: Skin (DNA)- live-scrape plastic scourer pad along animal to collect skin slough, or dead collect 2mm deep "cheese grater slice" with scalpel. Preserve in saturated salt solution (strongest possible solution of salt +/- 10% DMSO), or if not available, 80% ethanol, or freeze. Avoid freeze-thaw.
Carcass code: 1, alive. **2**, fresh dead. **3**, Some bloating may be present, possibly with tongue or penis protruded; mild odour, mucous membranes dry; eyes shrunken. **4**, decomposing, organs disintegrating, sloughing of skin; strong odour, blubber soft, pockets of gas or oil; muscle easily torn.

T2	**Necessary Equipment**: Form, pen, camera, scale and ID, large/ flensing knives, meat hooks, ruler/ callipers, plastic bags, ice/ refrigeration. Preservation: 100% ethanol for cleaning, Teflon sheeting/ bags or glass jars. Zip-lock bags, aluminium foil, freezer. Cutting board, stainless/ titanium blades. labelling pen, dymo labels or pencil on card for internal labels. **Necessary personnel**: One- two people, moderate skill required **Carcass code**: Code 2-3, some to 4 (see below). **Additional information**: Guide/ form for human interference; Appendix 2, Species ID guide, or contact a specialist (Appendix 4). For sample preservation: summary form SP or Appendix 4.

TIER TWO SAMPLING (deceased) **stranding ref #_____ collected by_____**

Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record _____:____D___/M___/Y____, contact details_____

Species_____ confirmed by _____

(*for species ID key see Appendix 4*)

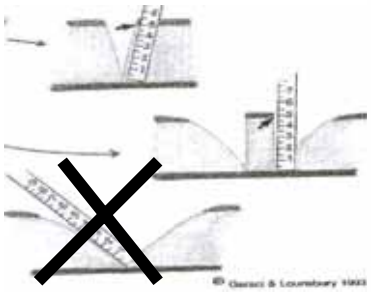
Carcass code_____

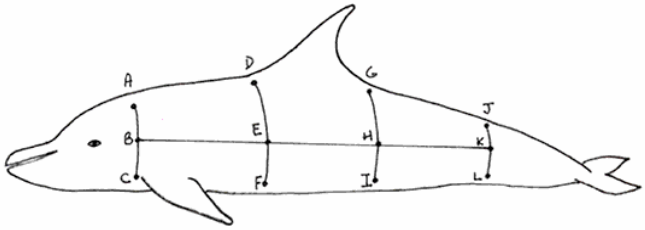
1. **20cm x 20cm block of skin and full thickness blubber (codes 2-3)** label with ID and hold chilled. □
(Anterior to dorsal fin. Sample to be trimmed later. If oil leaching out of sample then blubber probably useless.)
2. 6cm x 6cm x 6 cm block of muscle (codes 2-3) from under site of blubber sample, label and hold chilled□
3. 1 cm thick slice of external lesions (include edge) in 10x vol 10% buffered formalin for histopathology

Describe lesion:_____Photo#_____Label sample□

4. External parasites (codes 2-4) Check all orifices and grooves for parasites
Collect in 70% ethanol or 10% formalin. Label with animals ID and the location that the parasite was found.□

5. Blubber measurements (codes 2-4): refer to diagram. Measurements to be stated in millimetres to the nearest 0.1mm. Measure from **the base of the skin to the surface of the muscle**. Ensure measurement is at right angles to underlying muscle and skin surface. **Priority measurements are D and E.**





A	B	C	**D**	E	**F**	G	H	I	J	K	L

*Incise through the blubber to the muscle according to the diagram above and measure **blubber thickness** (in mm) at the specified locations. Ensure thicknesses mid-dorsal just in front of dorsal fin (D) and mid-ventral just in front of umbilicus (F) are measured as a minimum. Collect **parasites** and label with ID and where found.* □

Remove head or Jaw (head easiest unless really big)

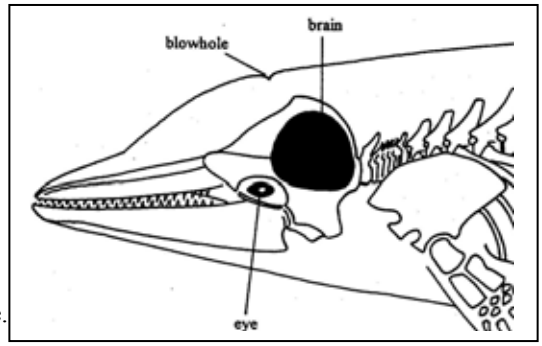
Contact specialist (Appendix 2) for decision on brain/ ear removal, radiography, or preservation.

Don't use chainsaw (dangerous and damaging). Note anatomy.

Cut behind skull, down to spine, then disarticulate

(some skill required here, cut between vertebrae).

Pack in ice/ refrigerate. If only taking jaw: place in plastic bag, freeze.



Sample details: FOLLOW EXACTLY Remove skin/ blubber/ muscle to clean environment (KEEP CHILLED). Surface skin (dark layer-305mm deep) 15mmx15mm diced finely in saturated salt +/-10% DMSO, or 80% ethanol, or freeze x2; 3cm x 1cm in vial and freeze x 3. Blubber: Rinse Teflon sheeting/ glass jars/ blades/ cutting surface with 100% ethanol between tissues. Trim off contaminated outer surface. 100g in glass or wrap in Teflon/ alfoil then in plastic zip lock x 5, 100g in plastic (no alfoil), 1cmx1cmx full thickness in plastic x2 (all samples full thickness, include deep skin to ID outer layers). Remove as much air as possible (label inside and out). Freeze -20C (-80 if possible). Muscle: 5mm cube in 10x vol sat salt soln +/- 10%DMSO or 80% ethanol or freeze; freeze 1cmx 1cm x 3 cm in plastic. NO internal labels to contact specimens (double bag and put label between) Parasites- relax in fresh water then ethanol **More information** Species ID guide, or contact a specialist (Appendix 4), sample shipping, tracking forms.

T3	**Necessary Equipment**: Form, pen, camera (prefer digital), large/ flensing knives, meat hooks, ruler/ callipers, plastic bags, ice/ refrigeration. Preservation: 80-100% ethanol for cleaning, Teflon sheeting/ bags or glass jars. Zip-lock bags, aluminium foil, freezer. Cutting board, stainless/ titanium blades. 10% formalin. 100% ethanol for stomach contents (or freeze if don't want algae). Accurate weighing scales. labelling pen, dymo labels or pencil on card for internal labels **Necessary personnel**: > two people, dissection, safety skill required, including understanding of zoonoses. **Carcass code**: Code 2-3, some to 4 (repro tract, stomach contents).**Additional information**: Appendix 2 (single animal protocol).

TIER THREE SAMPLING (if veterinarian or trained technician present, do concurrent with tier 4)

Stranding ref#_____ Carcass code_____(note step 1 for code 2-3 only- remainder 2-4)

Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record _____:___D___/M___/Y____, collected by (name)_____(contact)_____

Species_____ confirmed by _____

1.Chilled organs: (CODE 2-3 ONLY). Label with ID and organ and chill- to be trimmed later.
Liver (left hind) 500g_____, Kidney (left hind) 500g_____, Spleen 500g_____, Heart blood 20-50 ml_____
2. Reproductive organs: (CODE 2-4)
Remove entire reproductive tract and mammary glands for processing later (label and chill) OR if too large:

collect **gonads**- weigh and measure both (Testis- weigh and measure testis and epididymis separately; Examine ovaries for CL/ follicles, weigh and measure, label and keep chilled for preservation later)

Rt Gonad: Weight_____, _____x_____x_____, Features_____

L Gonad: Weight_____, _____x_____x_____, Features_____

Rt Uterine horn: Diameter_____ Wall thickness_____length_____

L Uterine horn: Diameter_____ Wall thickness_____length_____

Label and store in 10x vol 10% formalin. If testis or uterus are very large, take a cross- and longitudinal section of the testis and representative portions (1cm thick) of the uterus (vagina, cervix, uterine horn, fallopian tube)

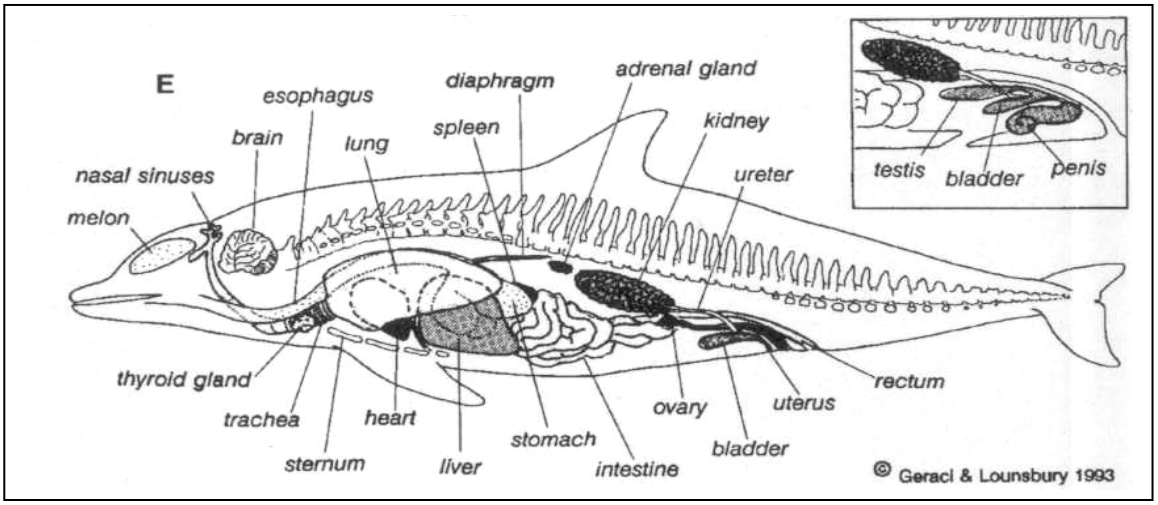
Fetus samples: Skin_____Blubber_____Muscle_____Other_____

Fetus measurements: (if small enough freeze whole after measuring and labelling)

Total length_____ Nose to anus_____

Flipper length_____ Fluke tip-tip_____ Max Girth_____

3. Stomach contents first stomach ___ second ____ third_____
100g freeze. 100g in ethanol (3 parts digesta, 1 part 100% ethanol or 2 part digesta, 1 part 80% ethanol). Bag and freeze remainder (in stomach) or if too large, weigh all and store some as described, and sieve remainder.
weight of contents first_____ second_____ third_____
4. Faeces (code 2 only) label and freeze some. _____
5. Internal parasites. Relax in fresh water, then preserve in 80% ethanol or 10% formalin. Label with ID and where found_____



Sample details: Remove samples to clean environment .For toxins: Rinse Teflon sheeting/ glass jars/ blades/ cutting surface with 100% ethanol between tissues. Trim off contaminated outer surface. 100g in glass or wrap in Teflon/ alfoil then in plastic zip lock- Liver (organics). 20g in plastic (no metal, note blade metal)- Liver, Kidney, Spleen (heavy metals).. 100g in plastic- Liver, Kidney (biotoxins). 1cmx1cmx3cm in plastic- Liver Kidney, Spleen (stable isotopes). Remove as much air as possible (label inside and out). Freeze -20C (-80 if possible). Freeze remainder of Liver, Kidney, Spleen in plastic (virology). NO internal labels to contact specimens (double bag and put label between). Blood- centrifuge 3000rpm 10 min, freeze serum (liquid). Repro tract samples in 10% formalin (10x vol, no thicker than 15mm, slice larger tissues). **More information** Species ID guide, or contact a specialist (Appendix 4).

T4

Necessary Equipment: Form, pen, camera (prefer digital), large/ flensing knives, meat hooks, ruler/ callipers, plastic bags, ice/ refrigeration. Bacto swabs, blood tubes, sample pots, ziplock bags, forceps, scissors, scalpels, labelling pen, dymo labels or pencil on card for internal labels. Microscope slides. Preservation: 10% formalin. 100% ethanol for stomach contents.
Necessary personnel: > two people. Pathologist, vet or zoologist experienced in cetacean dissection (including understanding of zoonoses).
Carcass code: Code 2-3, some to 4 (gross pathology only). **Additional information**: from SP, Appendix 2

TIER FOUR (PATHOLOGY)- pathologist, vet or zoologist experienced in cetacean dissection (including understanding of zoonoses). Tiers 1,2,3 must be completed

External	Description	Labelled (tick)	Photo #	Fluid	Tissue	Swab
Eye						
Blowhole						
Mouth						
Anus						
External lesions						
Other						

Superficial	Description	Labelled (tick)	Photo #	Fluid	Tissue	Swab
Mammary						
Subcutis						
Muscle						
AxillaryLN						
Brachial nerve						

Open	Description	Labelled (tick)	Photo #	Fluid	Tissue	Swab
Pleural cavity						
Abdominal cavity						

Thorax	Description	Labelled (tick)	Photo #	Fluid	Tissue	Swab
Pericardium						
Heart/ blood						
Thyroid						
Oesophagus						
Trachea						
Lung						
Thoracic LN						
Thymus						

Abdomen	Description	Labelled (tick)	Photo #	Fluid	Tissue	Swab
Liver						
Spleen						
Pancreas						
Mesenteric LN						
Kidneys						
Adrenals						
Bladder						
Reproductive tract	See tier three					
Gastro-intestinal						

Additional description of lesions:

Recommend: Collect all tissues and edges of lesions and chill for placement in 10x vol 10% formalin off beach (not thicker than 15mm). Additionally, excise lesions, kidney lung and spleen as 6cmx6cmx6cm pieces and place in sterile container and chill, then, off beach, sear surface, cut through with sterile swab, and swab inside cut. Swab to lab chilled <72hours. Request aerobic and anaerobic culture. Make impression smears with cut surfaces. Cut remainder in half- freeze half, other half in formalin.

DATA SHEET A, TEAM ONE (MASS STRANDING)

Record both film#/ frame #. Take photos from perpendicular to subject.

ID	SEX	Lact Y/N	Preg Y/N	Photo#: Tail	Photo#: Entire	Photo#: genitals	Carcass Code/ time

DATE_____ LOCATION_____

TOPOGRAPHY PHOTOS#_____

_____

COMMENTS_____

_____

_____

_____

DATA SHEET B,TEAM ONE- MASS STRANDING

(PHOTOS of ADDITIONAL FEATURES)

DATE____________LOCATION____________________________________

ID	FILM	FRAME	DESCRIPTION

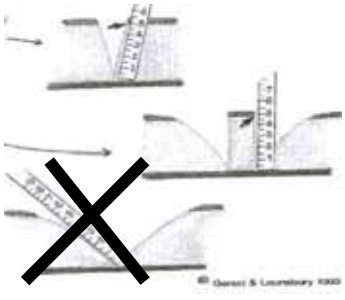
DATA SHEET TEAM TWO- MASS STRANDING
MEASUREMENTS, SKIN, BLUBBER AND MUSCLE

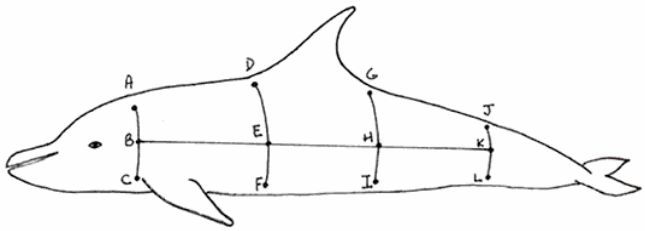
DATE_____LOCATION_____

Id	Tl	La	Flipper	Df	Flukes	Girth	Skin Time	Blub Time	Muscle Time	Blubber Thickness

(1) **TL**- Total length, tip of upper jaw to the deepest part of the notch between the tail flukes.
(2) **LA**- Length, tip of upper jaw to the centre of the anus
(3) **FLIPPER**-Length of flipper, anterior insertion to tip
(4) **DF**-Height of dorsal fin, tip to base
(5) **FLUKE**-Span of tail flukes, tip to tip. If whole span cannot be taken, take half-span (from fluke notch to tip) and state. Do not take a half span and simply double it!
(6) **GIRTH**-Girth, maximum. If whole girth cannot be taken, take half girth and state. If animal has been on beach for some time and has started to bloat, **do not take this measurement**, state in notebook that animal is bloated.

1. Blubber measurements (codes 2-4): refer to diagram. Measurements to be stated in millimetres to the nearest 0.1mm. Measure from the base of the skin to the surface of the muscle. Ensure measurement is at right angles to underlying muscle and skin surface.





A	B	C	**D**	E	**F**	G	H	I	J	K	L

Incise through the blubber to the muscle according to the diagram above and measure ***blubber thickness*** *(in mm) at the specified locations. Ensure thicknesses mid-dorsal just in front of dorsal fin (D) and mid-ventral just in front of umbilicus (F) are measured as a Minimum.*

- If time is of the essence make sure that at least a total length is taken (measurement #1).
- ALL MEASUREMENTS TO BE TAKEN IN STRAIGHT LINE- DO NOT FOLLOW CURVE.

TEAM THREE DATA SHEET- MASS STRANDING

TEETH, (See Separate Sheet) EYE AND EXTERNAL PARASITES

DATE__________________LOCATION____________________________

ID	Eye time	External Parasites (note where found)	Number of Teeth samples (see attached sheet)

TEAM THREE- MASS STRANDING

TOOTH SAMPLES

DATE_____LOCATION_____

ID	Upper R	Upper L	Lower R	Lower L
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				
Sampled tooth#- tooth#				

(Sampled tooth#-tooth#= mark which teeth sampled from- to)

TEAM FOUR DATA SHEET MASS STRANDING (2 PAGES plus PATHOLOGY)

One per animal

Necessary Equipment: Form, pen, camera (prefer digital), large/ flensing knives, meat hooks, ruler/ callipers, plastic bags, ice/ refrigeration. Preservation: 100% ethanol for cleaning, Teflon sheeting/ bags or glass jars. Zip-lock bags, aluminium foil, freezer. Cutting board, stainless/ titanium blades. 10% formalin. 100% ethanol for stomach contents (or freeze if don't want algae). Accurate weighing scales. labelling pen, dymo labels or pencil on card for internal labels **Necessary personnel**: > two people, dissection, safety skill required, including understanding of zoonoses. **Carcass code**: Code 2-3, some to 4 (repro tract, stomach contents).**Additional information**: Appendix 2, form SP

Stranding ref#_____ Carcass code_____

(**note step 1 for code 2-3 only- remainder 2-4**)

Animal ID_____ Sex_____ Adult/ Juv_____ Seen alive?____ Died ____:____

Time/ date of this record ___:___D___/M___/Y_____,

collected by (name)_____(contact)_____

Species_____ confirmed by _____

1. Chilled organs: (CODE 2-3 ONLY). Label with ID and organ and chill- to be trimmed later.

Liver (left hind) 500g_____, Kidney (left hind) 500g_____, Spleen 500g_____,

Heart blood 20-50 ml_____

2. Fetus samples: Skin_____Blubber_____Muscle_____Other_____

Fetus measurements: (if small enough freeze whole after measuring and labelling)

Total length_____ Nose to anus_____

Flipper length_____ Fluke tip-tip_____ Max Girth_____

3. Reproductive organs: (CODE 2-4)
Remove entire reproductive tract and mammary glands for processing later (label and chill) OR if too large: collect **gonads**- weigh and measure both (Testis- weigh and measure testis and epididymis separately; Examine ovaries for CL/ follicles, weigh and measure, label and keep chilled for preservation later)

Rt Gonad: Weight_____, _____x_____x_____, Features_____

L Gonad: Weight_____, _____x_____x_____, Features_____

Rt Uterine horn: Diameter_____ Wall thickness_____length_____

L Uterine horn: Diameter_____ Wall thickness_____length_____

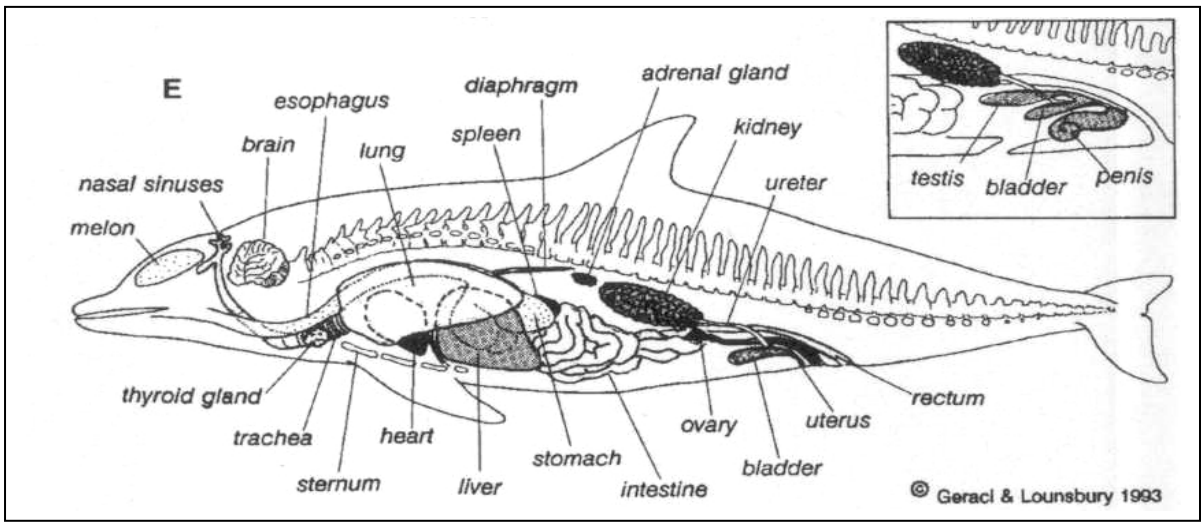
Label and store in 10x vol 10% formalin. If testis or uterus are very large, take a cross- and longitudinal section of the testis and representative portions (1cm thick) of the uterus (vagina, cervix, uterine horn, fallopian tube)

4. Stomach contents first stomach sampled_____ second stomach sampled_____

100g freeze. 100g in ethanol (3 parts digesta, 1 part 100% ethanol). Bag and freeze remainder (in stomach) or if too large, weigh all and store some as described. **weight of contents first_____ second_____**

5. Faeces (code 2 only) label and freeze some. _____

6. Internal parasites. Relax in fresh water, then preserve in 80% ethanol or 10% formalin. Label with ID and where found_____



Sample details: Remove samples to clean environment .For toxins: Rinse Teflon sheeting/ glass jars/ blades/ cutting surface with 100% ethanol between tissues. Trim off contaminated outer surface. 100g in glass or wrap in Teflon/ alfoil then in plastic zip lock- Liver (organics). 20g in plastic (no metal, note blade type)- Liver, Kidney, Spleen (heavy metals).. 100g in plastic- Liver, Kidney (biotoxins). 1cmx1cmx3cm in plastic- Liver Kidney, Spleen (stable isotopes). Remove as much air as possible (label inside and out). Freeze -20C (-80 if possible). Freeze remainder of Liver, Kidney, Spleen in plastic (virology). NO internal labels to contact specimens (double bag and put label between). Blood- centrifuge 3000rpm 10 min, freeze serum (liquid). Repro tract samples in 10% formalin (10x vol, no thicker than 15mm, slice larger tissues).

TEAM FOUR (PATHOLOGY)- pathologist, vet or zoologist experienced in cetacean dissection (including understanding of zoonoses). (ONE FORM PER ANIMAL)

Necessary Equipment: Form, pen, camera (prefer digital), large/ flensing knives, meat hooks, ruler/ callipers, plastic bags, ice/ refrigeration. Bacto swabs, blood tubes, sample pots, ziplock bags, forceps, scissors, scalpels, labelling pen, dymo labels or pencil on card for internal labels.
Preservation: 10% formalin. 100% ethanol for stomach contents.
Necessary personnel: > two people. Pathologist, vet or zoologist experienced in cetacean dissection (including understanding of zoonoses).

External	**Description**	**Labelled (tick)**	**Photo #**	**Fluid**	**Tissue**	**Swab**
Eye						
Blowhole						
Mouth						
Anus						
External lesions						
Other						

Superficial	**Description**	**Labelled (tick)**	**Photo #**	**Fluid**	**Tissue**	**Swab**
Mammary						
Subcutis						
Muscle						
AxillaryLN						
Brachial nerve						

Open	**Description**	**Labelled (tick)**	**Photo #**	**Fluid**	**Tissue**	**Swab**
Pleural cavity						
Abdominal cavity						

Thorax	**Description**	**Labelled (tick)**	**Photo #**	**Fluid**	**Tissue**	**Swab**
Pericardium						
Heart/ blood						
Thyroid						
Oesophagus						
Trachea						
Lung						
Thoracic LN						
Thymus						

Abdomen	**Description**	**Labelled (tick)**	**Photo #**	**Fluid**	**Tissue**	**Swab**
Liver						
Spleen						
Pancreas						
Mesenteric LN						
Kidneys						
Adrenals						
Bladder						
Reproductive tract	See tier three					
Gastro-intestinal						

Additional description of lesions:

Recommend: Collect all tissues and edges of lesions and chill for placement in 10x vol 10% formalin off beach (not thicker than 15mm). Additionally, excise lesions, kidney lung and spleen as 6cmx6cmx6cm pieces and place in sterile container and chill, then, off beach, sear surface, cut through with sterile swab, and swab inside cut. Swab to lab chilled <72hours. Request aerobic and anaerobic culture. Make impression smears with cut surfaces. Cut remainder in half- freeze half, other half in formalin.

ALTERNATIVE (BULK RECORDING FORM) FOR TEAM FOUR- SEE OTHER FORMS AND PROTOCOL FOR INSTRUCTIONS. (one form, many animals)

ID	Blubber dorsal (mm)	Blubber ventral (mm)	Liver 500g	Kidney 500g	Spleen 500g	Blood 20ml	Gonad L/R (g)	L Uterus diam/ wall/length (mm)	R Uterus diam/ wall/length (mm)	Stomach contents (wt, 1/2/3)	Contents collected?	Faeces	Parasites

SP	**Carcass code: 1**, alive. **2**, fresh dead. **3**, Some bloating may be present, possibly with tongue or penis protruded; mild odour, mucous membranes dry; eyes shrunken. **4**, decomposing, organs disintegrating, sloughing of skin; strong odour, blubber soft, pockets of gas or oil; muscle easily torn. **5**, mummified/ severely decomposed. Dead 48 hours is probably code 4.

SUMMARY PRESERVATION, SHIPPING, TRACKING : additional information see Appendix 4, and shipping info, tracking forms.

Sample/ Use	**Quantity**	**Storage method**	**Carcass code**				
			1	**2**	**3**	**4**	**5**
SKELETAL, TEETH, BALEEN, FLIPPER							
Speciation, age		Dried or frozen		+	+	+	+
HEAD (acoustic trauma)		See protocol and species list		+			
Eye lens (age)		frozen		+	+		
Earplugs (age)		10% formalin		+	+		
SKIN							
Genetics (speciation, population structure)	15mmx 15mm	10x vol saturated salt soln ± 10%DMSO. (or frozen or 80% ethanol)	+	+	+	+	+
Stable isotopes (diet)	3cmx 3cm	frozen		+	+	+	+
BLUBBER							
Organic contaminants-	100g (400g for archive)	Trimmed, frozen in glass/ teflon		+	+		
Biotoxins-	100g	Trimmed, frozen in plastic		+			
Fatty acids (diet)	1cmx 1cmx full thickness	Frozen		+	+		
Hormones	1cmx 1cmx full thickness	Frozen		+	+		
MUSCLE							
Genetics	15mmx 15mm	10x vol saturated salt soln ± 10%DMSO. (or frozen or 80% ethanol)		+			
Stable isotopes (diet)	1cm x 1cm x 3cm	Frozen		+	+		
LIVER							
Organic contaminants-	100g	Trimmed, frozen in glass/ teflon		+	+		
Inorganic contaminants (metals)-	20g	Trimmed, frozen in plastic		+	+		
Biotoxins-	100g	Trimmed, frozen in plastic		+			
Polyaromatic hydrocarbon contaminants	5 mL bile, 50g liver- early class 2 only	Liquid N, protect from light		+			
Virology	6 cm^3	Trimmed and frozen		+			
Stable isotopes (diet)	1cm x 1cm x 3 cm	frozen		+	+		
KIDNEY							
Inorganic contaminants (metals)-	20g	Trimmed, frozen in plastic		+	+		
Biotoxins-	100g	Trimmed, frozen in plastic		+			
Virology	6 cm^3	Trimmed and frozen		+			
Stable isotopes (diet)	1cm x 1cm x 3 cm	frozen		+	+		
SPLEEN							
Virology	6 cm^3	Trimmed and frozen		+			
Bacteriology	6 cm^3	Chilled or seared and swabbed		+			
Stable isotopes (diet)	1cm x 1cm x 3 cm	frozen		+	+		
BRAIN							
Organic contaminants-	100g	Trimmed, frozen in glass/ teflon		+	+		
Biotoxins-	100g	Trimmed, frozen in plastic		+			
Virology	6 cm^3	Trimmed and frozen		+			
CHILLED ABNORMAL TISSUE							
Bacteriology	6 cm^3	Chilled or seared and swabbed		+			
Virology	6 cm^3	Trimmed and frozen		+			
Virology (electron microscopy)	1mm^3	Chilled, glutaraldehyde 5%		+			
FORMALIN FIXED TISSUES							
Histopathology, histoanatomy		Room temp, formalin. Label inside and out	+	+	+		
STOMACH CONTENETS		All frozen or					
Otoliths		Frozen/ ethanol		+	+	+	
Squid beaks		formalin		+	+	+	
Biotoxins				+			
BLOOD							
EDTA/ LiH (Haematology)	> 1 mL	Chilled to lab in 48h	+				
Plain, LiH and Fl Ox Plasma/ serum (Biochemistry, serology, hormones)	> 5mL	Frozen	+	+	+		
Toxicology	6 ml whole blood	Frozen	+	+			
SWABS (bacteriology)		Cool, to lab in 72h	+	+			
PARASITES							
Most		AFA and 80% ethanol	+	+	+		
Trematodes and cestodes		Fresh water then 10% formal saline	+	+	+		
FAECES (parasites, hormone) (Code 2:DNA-freeze)	5g each	Frozen and 10% formalin	+	+	+		
REPRODUCTIVE		Measure, weigh, 10% formalin (open uterus and section testis (not ovaries)		+	+		
DATA AND PHOTOS		Cross-check and complete	+	+	+	+	+

SHIPPING INFORMATION

Additional information is contained within the IATA regulations for shipping dangerous goods. The following is a guide only. You should check with the relevant shipping/ customs/ environmental/ quarantine agents or sample recipients for the relevant permitting/ packaging and storage requirements of your state or agent. (NB: IATA approved shipping containers can be purchased)

- Make arrangements for samples to be maintained at storage temperature during shipping. Especially avoid freeze/ thaw.
- Ensure the recipient will be there to receive the samples
- For samples in liquid preservative (eg formaldehyde), preserve for approx 1 week then remove the liquid and wrap sample in gauze swab or cloth moistened with the preservative and seal container well.
- Double-bag samples with a label between (paper tag, pencil) and outside (lab marker) the bags.
- Place in a robust container (with dry ice if appropriate).
- Place in Styrofoam packed box or esky with appropriate coolant.
- **In general, sample must be within 2 sealed, impact resistant containers with sufficient absorbent material to absorb all liquid enclosed in case of leakage.**
- Enclose copies of relevant data forms. (**keep a copy**)
- Complete tracking form and enclose a copy (**keep a copy**)
- Ensure copies of relevant permits are attached on the **outside** of the package for inspection by authorities

64 **Limited classes of dangerous goods which may be carried (Australia Post)**

64.1 Dangerous goods specified in clauses 64.2 to 64.3 inclusive, may be lodged and carried by post providing they are properly packed and comply with such terms and conditions governing their carriage.

64.2 **Infectious perishable biological substance** which are dangerous goods may be lodged and carried by post within Australia providing:
64.2.1 an article containing such a substance is:
(i) addressed to a recognised laboratory, hospital, clinic or regulatory body;
(ii) lodged at an office for delivery within Australia by:-
1 a qualified medical practitioner or veterinary surgeon;
2 hospital, clinic, regulatory body or recognised laboratory;
3 a member of a Commonwealth, State or Territory police force; or
4 a person who has the authority of the agencies in clause (ii) above;
(iii) sent at the perishable infectious biological substances rates determined by Australia Post; and
(iv) packaged and presented in the manner prescribed in the current Technical Instructions of the Civil Aviation Organisation as reflected in the IATA Dangerous Goods Regulations;

64.3 **Non-infectious perishable biological substances and solid carbon dioxide (dry ice)**, when used as a refrigerant, may be lodged and carried by post within Australia providing:
64.3.1 an article containing such a substance is:
(i) addressed to a recognised laboratory, hospital, clinic or regulatory body;
(ii) lodged at an office by:-
1 a qualified medical practitioner or veterinary surgeon;
2 hospital, clinic, regulatory body or recognised laboratory;
3 a member of a Commonwealth, State or Territory police force; or
4 a person who has the authority of the agencies in clause (ii) above; and
(iii) packaged and presented in the manner prescribed in the current Technical Instructions of the Civil Aviation Organisation as reflected in the IATA Dangerous Goods Regulations.

SAMPLE PRESERVATION AND TRACKING FORM **Stranding ref #_____**

Date_____ Location of stranding _____

Location of preservation_____ Processed by _____contact_____

Method of storage before processing_____

Animal ID	Sample #	Carcass code	Tissue	Time/ Date processed	Method preservation	Sent to	Sent by (person/ date)	Arrived (person/ date)

NB: toxicology samples note blade metal, type of alcohol used (reagent grade or domestic), and whether wrapped in alfoil or Teflon.